J. New York Entomol. Soc. 98(3):369–375, 1990

MACROCHLIDIA, NEW GENUS: THE DESCRIPTION OF A REMARKABLY LARGE TORTRICID MOTH (LEPIDOPTERA: TORTRICIDAE: CHLIDANOTINAE)

John W. Brown[1]

Entomology Department, National Museum of Natural History,
Smithsonian Institution, Washington, D.C. 20560

Abstract.—Macrochlidia, new genus, is described from Colombia and Venezuela; it includes two species: *M. major,* new species, and *M. minor,* new species. Females of *M. major* are the largest moths in the Chlidanotinae (Tortricidae). The male genitalia of *Macrochlidia* are characterized by fusion of the hami and socii; the characteristic chlidanotine "asteroid" signum of the female is greatly reduced. The Neotropical fauna of Chlidanotini currently includes 25 described species placed in six genera; over half of the Neotropical Chlidanotini species represented in major collections worldwide are undescribed.

Tortricids are comparatively small moths included in the broad category "Microlepidoptera." The largest individuals in the family include females of *Anacrusis* Zeller (Atteriini) and *Cerace* Meyrick (Ceracini), with forewing lengths reaching approximately 21 and 26 mm respectively. I recently discovered a series of an undescribed Chlidanotini in the collection of the British Museum (Natural History). The largest female has a forewing length of approximately 21 mm; it is the largest species in the subfamily Chlidanotinae. A new genus, *Macrochlidia,* is described below to accommodate this extraordinary species, *M. major,* new species, and a second new species, *M. minor.*

Depositories are abbreviated in the text as follows: BMNH, British Museum (Natural History), London, England; USNM, United States National Museum, Smithsonian Institution, Washington, D.C. A survey of collections at the following institutions revealed an abundance of undescribed Chlidanotini but failed to produce additional specimens of the new genus: American Museum of Natural History, New York, New York (AMNH); Academy of Natural Sciences, Philadelphia, Pennsylvania (ANSP); California Academy of Sciences, San Francisco, California (CAS); Carnegie Museum of Natural History, Pittsburgh, Pennsylvania (CMNH); Natural History Museum of Los Angeles County, Los Angeles, California (LACM); San Diego Natural History Museum, San Diego, California (SDNHM); Essig Museum of Entomology, University of California, Berkeley (UCB).

Dissection procedures followed those presented by Powell (1964). Nomenclature for genitalic structures and wing venation follows Horak (1984); abbreviations are as follows: DC = discal cell; FW = forewing; HW = hindwing.

---

[1] Present address: Entomology Section, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007.

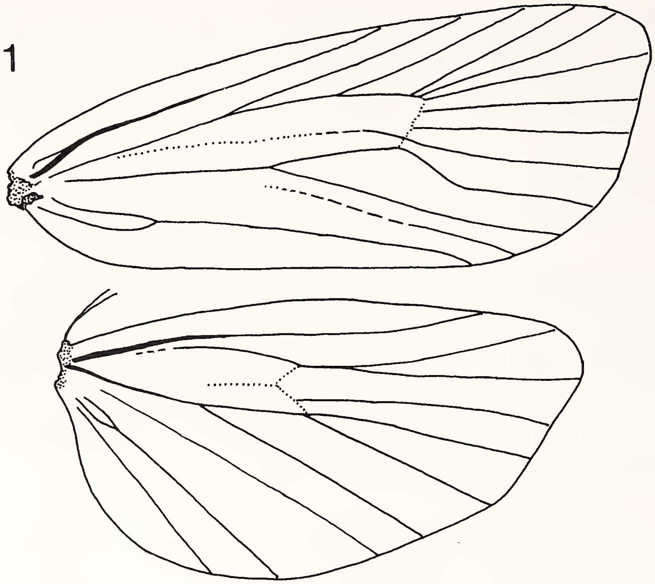
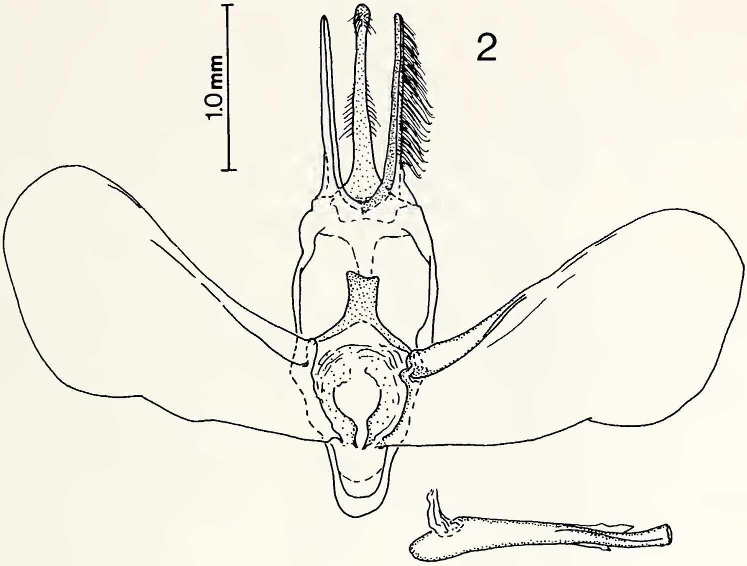


Fig. 1. Wing venation of *Macrochlidia major* female.

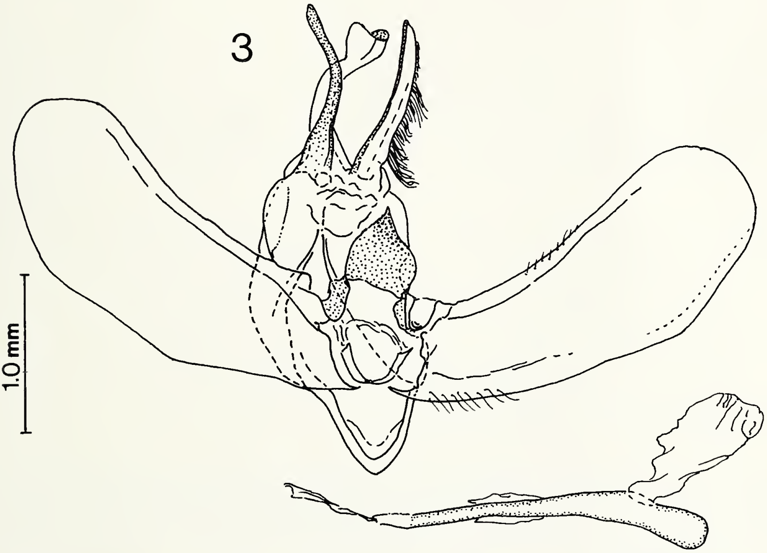
Macrochlidia, new genus

Head: Antenna simple, slightly flattened in distal 0.4; conspicuously thicker in male; cilia extremely short. Labial palpi long; segment II upturned, with long, bushy scales ventrally; segment III ca. 0.45 as long as II, slender, exposed, with appressed scales. Maxillary palpi inconspicuous. Scaling on frons smooth below mid-eye, roughened above. Ocelli small. Chaetosema poorly developed, with few setae. Thorax: Smooth scaled with upraised tegulae (probably an artifact of spreading). No specialized structures on legs. Forewing: Venation as in Figure 1. Length 2.2–2.3× greatest width; length of DC ca. 0.65× FW length; width of DC ca. 0.15 its length; CuA_2 originating ca. 0.6 along length of DC; all veins separate; R_4 to costa, R_5 to termen; CuP present; chorda absent; M-stem faint throughout most of DC, prominent in distal portion. Hindwing: Venation as in Figure 1. Sc + R and Rs separate; crossvein and base of Rs weak; Rs and M_1 short-stalked; M_3 and CuA_1 connate; M_2 and M_3 fairly distant in origin; CuP weak; M-stem absent; dense patch of elongate setae at base of 1A + 2A. Abdomen: Dorsal pits absent. Male genitalia: As in Figures 2–3 (3 dissections). Uncus simple, well developed, enlarged or narrow apically; uncus with sparse, fine setae ventrally near apex, laterally along subbasal region. Socii long, narrow, fused to hami, with dense, fine setae. Gnathos reduced to membranous band. Subscaphium absent. Transtilla with large, free, medial flap, projecting from diaphragma. Valva large, slightly broadened distally, with rounded apex; distal 0.5 covered with fine setae and faint parallel creases; costa with weakly invaginated region in basal 0.4; clasper and pulvinus absent. Saccus-vinculum complex moderately large, subrectangular; weakly attenuate distally. Aedeagus simple, narrow, with slightly expanded, rounded phallobase; vesica with or without cornuti. Female genitalia

2



3



Figs. 2–3. 2. Male genitalia of *Macrochlidia major*. 3. Male genitalia of *Macrochlidia minor*.

(based on *M. major* only): As in Figure 4 (2 dissections). Papillae anales broadened medially, curving laterad, with setae from elongate, nipple-like bases. Apophyses long, slender, nearly equal in length. Sterigma weakly sclerotized with sparse patches of strong setae; deep rectangular invagination of sterigma at ostium, subtended ventrally by a pair of submedial lobes of sternum VII. Ductus bursae long, slender.

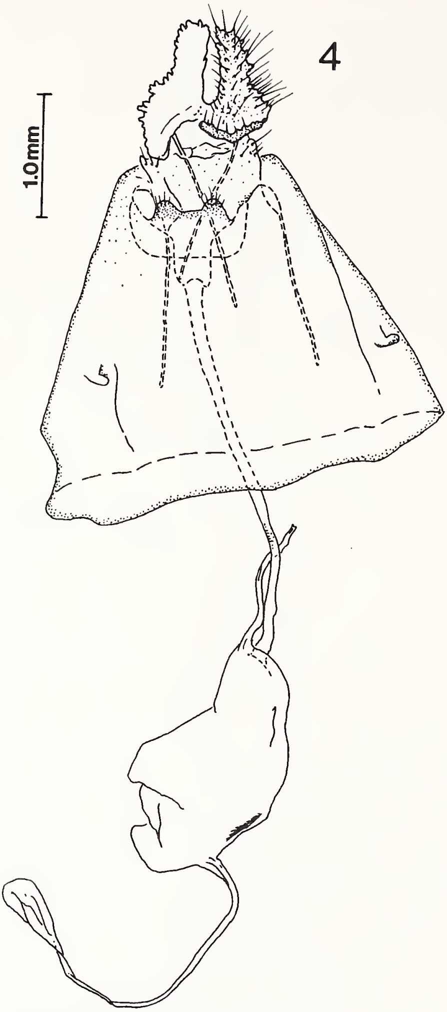


Fig. 4. Female genitalia of *Macrochlidia major.*

Corpus bursae moderately small, pear-shaped (in mated females); signum a small longitudinal patch of tiny spines. Ductus seminalis arising from near junction of corpus and ductus burase. Frail accessory bursa with narrow ductus arising at anterior end of corpus bursae.

Diagnosis. Adults of *Macrochlidia* are the largest in the Chlidanotini; only *Pseudocomotis* Brown approaches *Macrochlidia* in forewing length (Brown, 1990). Based on the two new species, *Macrochlidia* can be distinguished superficially from all other chlidanotine genera by its simple forewing pattern—uniform light beige-brown with few, small, scattered, dark brown dots. The male genitalia of *Macrochlidia* are similar to *Monortha* Razowski and Becker in the fusion of the socii and hami, but *Macrochlidia* lack the strong spine-like setae on the socii and uncus that are present in *Monortha.*

The broad, sclerotized, medial flap of the transtilla appears to be an autapomorphy for the genus. The female genitalia of *Macrochlidia* are similar to those of other Chlidanotini and Hilarographini in the shape and configuration of the corpus, ductus, and accessory bursae. However, in *Macrochlidia* the signum is greatly reduced.

The genus includes two previously undescribed species from Colombia (1,800–2,800 m) and Venezuela (1,400 m). Nothing is known of the biology.

Macrochlidia major, new species

Figs. 2, 4, 5

Male. FW length 14.5–18.5 mm ($\bar{x}$ = 16.5; N = 2). Head: Frons and vertex light tan-ocherous. Labial palpus white, light tan laterally. Antenna light tan. Thorax: Concolorous with head. Forewing: Unicolorous light beige-brown with minute light brown dots; a pair of dark brown dots along termen ca. 0.75 from tornus to apex; a few scattered brown scales near apex of DC. Fringe concolorous with wing with small black smudge along termen near apex. Hindwing: White with light gray-brown overscaling. Fringe conolorous with wing. Abdomen: Segment VIII with broad, square, u-shaped notch on sternum; posterior edge of tergum with elongate specialized scales. Genitalia: As in Figure 2 (drawn from BM slides no. 26114, 26111; N = 2). Uncus slender, elongate, weakly enlarged apically, with sparse, fine setae ventrally near apex and laterally along subbasal portion of uncus. Socii and hami fused, but components distinct; hami slender, sclerotized, slightly curved; socii weakly sclerotized, digitate, only slightly shorter than hami, with dense, long, fine setae. Gnathos not developed. Transtilla with broad, medial subrectangular plate. Valva large, expanded distally with broad, round apex; costa with shallow longitudinal invagination in basal 0.5; sacculus weakly developed. Saccus broad, semi-rectangular, rounded distally. Anellus semi-sclerotized. Aedeagus a simple, narrow tube with medial line of sclerotization in distal 0.5.

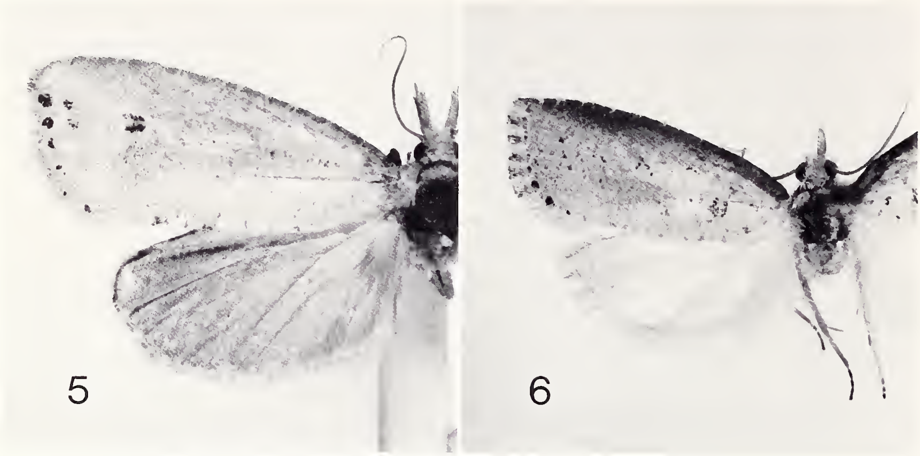
Female. FW length 16.0–21.0 mm ($\bar{x}$ = 19.5; N = 3). Similar to male but FW markings slightly larger, more well defined, and pregenital abdomen unmodified. Genitalia: As in Figure 4 (drawn from BM slides no. 26112, 26113; N = 2). Papillae anales broadest in middle. Posterior portion of sterigma with stout bristle-like setae around perimeter; posterior margin of sternum VII with a pair of short submedial lobes bearing 5–7 strong, bristle-like setae; ostium recessed in a deep narrow cup. Caudal portion of ductus bursae with fine spicules. Signum a narrow patch of fine, needle-like spines.

Type material. Holotype male: Colombia, Magdalena, Sierra de Santa Marta, 2,800 m, 10°54′N, 73°58′W, Oxford Expedition to Colombia, VII.3/IX.2.73 [3 July to 2 September 1973], BM 1973-500 (BMNH). 1M, 3F paratypes as follows: COLOMBIA: Sierra del Libano, 6000′, V.1898 [May 1898], H. H. Smith (BMNH).

Macrochlidia minor, new species

Figs. 3, 6

Male. FW length 14.0 mm (N = 1). Head: Frons and vertex white. Labial palpus white medially, tan-brown laterally. Antenna tan-brown. Thorax: Yellow-ocherous. Forewing: Light beige-brown, darker along costa, with sparse, scattered, small, dark brown dots; small, diffuse, dark brown spot in basal 0.25; costa with faint, white,



Figs. 5–6. 5. Adult female of *Macrochlidia major.* 6. Adult male of *Macrochlidia minor.*

transverse strigulae; tornus with 3–4 dark brown dots. Fringe checked white and beige. Hindwing: White with faint light beige overscaling. Fringe concolorous with wing. Genitalia: As in Figure 3 (drawn from USNM slide no. 68725; N = 1). Uncus irregularly enlarged apically; setae sparse or absent. Hami and socii long, slender, weakly curved distally, with long, fine setae. Transtilla with broad, semi-rectangular flap, attenuate distally, weakly dentate in distal 0.33. Valva large, broad. Saccus v-shaped. Aedeagus simple, narrow; vesica with patch of 6 small, slender cornuti.

Female. Unknown.

Type material. Holotype male: Venezuela, Aragua, Choroni Pass, 1400 m, I-10-66 [10 January 1966], S. S. & W. D. Duckworth (USNM).

DISCUSSION

The Chlidanotini are a well defined, monophyletic group, and are almost certainly the sister group to the Hilarographini (Brown 1990). Tuck (1981) presented a tribal checklist of the 16 genera and 37 species of the world fauna. However, because he was unaware of the occurrence of chlidanotines in the Neotropical region, he considered the tribe to be restricted to the Indo-Australian and African tropics. This interpretation was followed by Horak and Brown (in press). Razowski (1987) recognized 16 Neotropical species of Chlidanotini, and proposed 4 new genera to accommodate 10 of these. Recognition of the tribe in South America demonstrates a probable Gondwanan origin of the group, consistent with previous hypotheses that the Chlidanotinae represents the most primitive tortricoid subfamily. The two other tribes in the subfamily (i.e., Hilarographini and Polyorthini) also exhibit southern continental distributions (Diakonoff, 1974: Heppner, 1982).

Over half of the known species (ANSP, BMNH, UCB, USNM) of Neotropical Chlidanotini are undescribed. The tribe currently includes 21 Neotropical species placed in six genera; four additional species are assigned to polyphyletic genera included in subfamilies other than the Chlidanotinae.

ACKNOWLEDGMENTS

I thank the following for allowing me to examine specimens in their care: J. F. G. Clarke (USNM); C. L. Hogue (LACM); D. K. Faulkner (SDNHM); D. H. Janzen, University of Pennsylvania, whose material is deposited at ANSP; F. H. Rindge (AMNH); J. A. Powell (UCB); K. R. Tuck (BMNH). This work was completed under the support of a Smithsonian Postdoctoral Fellowship.

LITERATURE CITED

Brown, J. W. 1990. Description of a new genus in the Chlidanotini and review of phylogenetic relationships among chlidanotine tribes (Lepidoptera: Tortricidae: Chlidanotinae). Entomol. Scand. 20:439–448.

Diakonoff, A. 1974. The South Asiatic Polyorthini with notes on species of *Polyortha* Dognin (Lepidoptera, Tortricidae). Zool. Verh. 131:1–86.

Heppner, J. 1982. Synopsis of the Hilarographini (Lepidoptera: Tortricidae) of the world. Proc. Entomol. Soc. Washington 84:704–715.

Horak, M. 1984. Assessment of taxonomically significant structures in Tortricinae (Lep., Tortricidae). Bull. Soc. Entomol. Suisse 57:3–64.

Horak, M. and R. Brown. In press. Taxonomy and Phylogeny. *In:* van der Geest (ed.), Tortricoid Pests, Their Biology, Natural Enemies, and Their Control. Elsevier Press, Amsterdam, Netherlands.

Powell, J. A. 1964. Biological and taxonomic studies on tortricine moths, with reference to the species in California. Univ. Calif. Publ. Entomol. 32:1–317.

Razowski, J. 1987. Neotropical Chlidanotini (Lepidotpera, Tortricidae). Bull. Polish Acad. Sci., Biol. Sci. 35:61–71.

Tuck, K. 1981. A new genus in the Chlidanotini (Lepidoptera, Tortricidae) from New Caledonia, with a key to genera and check-list of species. Syst. Entomol. 6:337–346.

Received June 27, 1989; accepted January 2, 1990.